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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/486,536	06/07/95	HIATT	A 214/177

EXAMINER

HM22/0614

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ART UNIT WILSON, PAPER NUMBER
1623 22

DATE MAILED: 06/14/99

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on March 22, 1999.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 (Three) month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1, 3-4 and 6-8 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 3-4 and 6-8 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of Reference Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 19 (3/11/99)

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

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– SEE OFFICE ACTION ON THE FOLLOWING PAGES –

* U.S. GPO: 1996-410-238/40050

Claims 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Each of claims 6, 7 and 8 is drawn to a compound. The limitations intended to be imposed which include subsequent methodological manipulations (e.g. methods for removal of blocking groups, time periods for removal of blocking groups and attachment to additional structures via a blocking group) are not seen to be limitations which particularly limit the compounds as claimed. Product claims with process limitations are ordinarily improper when the structure of the product is known. The limitations introduced here do not particularly point out a "process" for making the product as claimed but a process for subsequently modifying the product as claimed. These limitations are not seen to add further limitations to the product as claimed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Inoue et al. Patent 4,965,350 and the Buhr et al. Patent 5,466,786.

Claim 1 is drawn to a 5'-triphosphate substituted in the 3'-position with a hydrocarbyl. Claim 3 is drawn to a 5'-triphosphate substituted in the 3'-position with an ester, ether or

phosphate. Claim 4 depends from claim 3 and designated the nucleobase portion of the compound as adenine, guanine, thymine, cytosine or uracil.

The definition of the term "hydrocarbyl in the instant specification, as set forth on page 11, lines 18-29 includes a broad range of moieties. The Buhr et al. Patent discloses 2'-modified nucleotide compounds. Applicants' attention is directed to claim 1, wherein the variable W_1 in the 5'-position of the monomer is a phosphate ester moiety wherein the subscript variable "m" is the integer 3 and the variable W_2 is a phosphate moiety selected from the ester PO_3^{-2} , and potential hydrocarbyl moieties, which contain heteroatoms and alkyl chains, such as $P(O)NR_2$, P(O)R, P(O)OR', CO and CNR_2, wherein R is H or alkyl (1-6 C) and R' is alkyl (1-6 C). Buhr et al also includes the instantly claimed purine and pyrimidine bases, wherein the variable "B" is defined in the prior art patent in column 3, lines 53-56 as adenine, guanine, thymine, cytosine or uracil. This disclosure and the scope of this patents claim 1 is seen to render the instantly claimed compounds which are 5'-triphosphate compounds with hydrocarbyl, ester and phosphate moieties substitutable in the 3'-position obvious to one having ordinary skill in this art.

The Inoue et al. Patent discloses nucleotide compounds wherein the 5'-position may be substituted with a triphosphate moiety. Applicant's attention is directed to claim 1 in column 22, wherein the nucleotide depicted therein may be a 5'- triphosphate, when the variable X_1 is represented by the phosphate moiety and the subscript "n" is 3 and the 3'-position may be substituted with a phosphate when the variable Y_1 is represented by the phosphate moiety and the

subscript "n" is 1. The Inoue et al. Patent displays a moiety which is not only a phosphate, but also an ester.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

In determining the scope and content of the prior art, one skilled in the art of nucleoside chemistry could determine that the prior art teaches nucleoside 5'-triphosphate compounds wherein the 3'-position can be substituted with moieties which are known in the art to be hydrocarbyl moieties, esters and phosphates. The difference between the Buhr et al. Patent and the instantly claimed compounds is the requisite presence of a moiety in the 2'-position of the monomer of the prior art nucleotide compound. The instantly claimed compounds contain the term "having", which is seen to be open ended and does not specifically exclude additional modifications to the compounds claimed by applicant. The difference between the Inoue et al. Patent and the instantly claimed compounds is the limited display of variability in the 3'-position as disclosed in this prior art patent. Note, the nucleobase moiety is also different from those specifically disclosed in the dependent claims of this application. The instant invention would have been obvious to one of ordinary skill in this art to obtain a 5'-triphosphate nucleoside compound

with an ester, phosphate or hydrocarbyl moiety in the 3'-position because the prior art teaches these monomers for use in the preparation of oligomers. The evidence of record is not seen to be of such a nature to obviate the teachings of the prior art and the invention as claimed is deemed obvious in view of the prior art teachings cited supra.

Any inquiry concerning this communication should be directed to James O. Wilson, Primary Examiner in Art Unit 1623 at telephone number (703) 308-4624.

JAMES O. WILSON
PRIMARY EXAMINER
GROUP 1600